

**INITIAL EXPRESS TERMS
FOR
PROPOSED BUILDING STANDARDS
OF THE
DEPARTMENT OF WATER RESOURCES**

**REGARDING THE ADOPTION OF THE
2019 CALIFORNIA PLUMBING CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 5**

(DWR 01/18)

The Department of Water Resources (DWR) proposes to adopt certain sections of the 2018 edition of the Uniform Plumbing Code (UPC) and the existing 2016 edition of the California Plumbing Code (CPC) and make necessary changes to be included into the 2019 edition of the CPC as presented on the following pages, including any necessary amendments.

LEGEND FOR EXPRESS TERMS:

1. **Vertical Bar:** Modifications to the current adopted CPC. Any changes to the current (2016) CPC will have a vertical bar in the left margin. See 2, 3, and 6 which have amendments to the California code.
 - Note a new adoption by DWR of sections part of the UPC but not part of the CPC adopted by another agency is a modification to the CPC code and would have a vertical bar.
 - Note a new adoption by DWR of sections part of the existing CPC adopted by another agency is not a modification to the CPC and would not have a vertical bar.
 2. **UPC language with new California amendments:** UPC language shown in normal Arial 9 point; California amendments to UPC text shown *underlined and in italics* with vertical bar in left margin.
 3. **Existing California amendments being modified:** All such existing language shown in *italics*, modified language is underlined or shown in ~~strikeout~~ with vertical bar in left margin.
 4. **Existing California amendments with no modification:** All such existing language shown in *italics*, modified model code language is shown in ~~strikeout~~.
 5. **Text not being modified:** All language not displayed in full is shown as “...” (i.e., ellipsis).
 6. **Repealed text:** All language shown in ~~strikeout~~ with vertical bar in left margin.
 7. **Notation:** Authority and Reference citations are provided at the end of each action.
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SUMMARY OF REGULATORY ACTION

DWR intends to redesignate the sections of Chapter 15 of the 2016 CPC as amended to accommodate the organizational restructuring in the 2018 Uniform Plumbing Code that occurred since the 2015 Uniform Plumbing Code was first codified. DWR also intends to make non-substantive amendments to certain sections of the UPC and CPC, including parts of chapters 1, 2, 6, and 15. A summary of the sections being adopted or amended is presented in the following tables. The specific changes are grouped and described in the following items 1 through 5.

DWR PROPOSES TO:

- Repeal the 2015 edition of the Uniform Plumbing Code (UPC)
- Repeal the 2016 edition of the California Plumbing Code (CPC), including existing California amendments to the model code that are no longer necessary
- Adopt sections from the 2018 UPC into the 2019 CPC **without amendments**

Item	Section Number	Title
4	1501.0	General
4	1501.2	System Design
4	1501.4	Component Identification
4	1501.8	Material Compatibility
4	1501.10	System Controls
4	1502.0	Inspection and Testing
4	1503.0	Gray Water Systems

- Delete sections from the 2018 UPC that are not applicable to the 2019 CPC

Item	Section Number	Title
4	UPC 1501.5.1	Frequency
4	UPC 1501.5.2	Maintenance Log

- Adopt sections from the 2018 UPC into the 2019 CPC **with non-substantive section renumbering from 2018 UPC and 2016 CPC and editing section references in text**

Item	Section Number	Title
4	1501.5.1	Maintenance Responsibility
4	1501.12	Abandonment
4	1501.12.1	General
4	1501.12.2	Underground Tank
4	1501.13	Sizing
5	1505.8	Valves

- Adopt sections from the 2018 UPC into the 2019 CPC **with existing amendments from the 2016 CPC**

Item	Section Number	Title
2	220.0	Reclaimed (Recycled) Water
3	601.2	Hot and Cold Water Required
4	1501.1	Applicability
4	1501.1.1	Allowable Use of Alternate Water
4	1501.3	Permit

- Adopt sections from the 2018 UPC into the 2019 CPC **with existing amendments and new non-substantive editorial or clarifying amendments, section renumbering, and editing section references in text**

Item	Section Number	Title
3	601.3.3	Alternate Water Sources
4	1501.5	Maintenance and Inspection
4	1501.6	Operation and Maintenance Manual
4	1501.7	Minimum Water Quality Requirements
4	1501.9.1	Commercial, Industrial, Institutional, and Residential Restroom Signs
4	1501.9.2	Equipment Room Signs
4	1501.11	Separation Requirements
4	1502.1	General
4	1503.3	Connections to Potable and Reclaimed (Recycled) Water Systems
5	1505.0	Recycled Water Supply Systems in Buildings
5	1505.1	General
5	1505.1.1	Allowed Uses
5	1505.2	Permit
5	1505.2.1	Plumbing Plan Submission
5	1505.3	System Changes
5	1505.3.4	Connections to Potable or Reclaimed (Recycled) Water Systems
5	1505.5	Initial Cross-Connection Test
5	1505.6	Recycled Water Supply System Materials
5	1505.7	Recycled Water Supply System Color and Marking Information
5	1505.9	Hose Bibbs
5	Figure 1505.9	[No title]
5	1505.10	Required Appurtenances
5	1505.11	Pipe Separation in Trenches
5	1505.12	Signage
5	1505.13	Inspection and Testing
5	1506.4	Connections to Potable or Reclaimed (Recycled) Water Systems

- Bring forward existing California amendments from the 2016 CPC for adoption into the 2019 CPC **without modifications**

Item	Section Number	Title
1	1.13.0	Department of Water Resources
1	1.13.2	Adopting Agency Identification
2	206.0	Disinfected Tertiary Recycled Water
2	220.0	Recycled Water Supply System

STATE OF CALIFORNIA
BUILDING STANDARDS COMMISSION

- Bring forward existing California amendments from the 2016 CPC for adoption into the 2019 CPC **with non-substantive editorial or clarifying modifications, section renumbering, and editing section references in text**

Item	Section Number	Title
1	1.13.1	Application
4	1501.9	Signage
4	1501.14	Hose Bibbs for Single-Family Dwellings
5	1505.1.2	Structures Allowed for Toilet and Urinal Flushing
5	1505.8.1	Valve Seals
5	1505.8.2	Valve and Appurtenance Access Door Signs
5	1505.12.1	Commercial, Industrial, Institutional, and Residential restroom Signs
5	1505.12.2	Tank-Type Toilet Signs
5	1505.12.3	Equipment Room Signs
5	1505.13.1	Supply System Inspection and Test
5	1505.13.2	Cross-Connection Inspection and Testing
5	1505.13.2.1	Visual System Inspection
5	1505.13.2.2	Cross-Connection Test
5	1505.13.2.3	Discovery of Cross-Connection
5	1505.13.2.4	Periodic Inspection
5	1505.14	Minimum Water Quality Requirements for Reclaimed (Recycled) Water
5	1505.15	Maintenance and Inspection
5	Table 1505.15	Minimum Reclaimed (Recycled) Water Source Testing, Inspection, and Maintenance Frequency

- Delete California amendments from the 2016 CPC that are not applicable to the 2019 CPC

Item	Section Number	Title
4	Chapter 15	Intent

- Not adopt into the Express Terms any section of the 2018 UPC not listed in the above tables.

1. DWR proposes to adopt the following sections of Chapter 1 of the CPC as follows:

**CHAPTER 1
ADMINISTRATION
DIVISION I
CALIFORNIA ADMINISTRATION**

1.13.0 Department of Water Resources (DWR).

1.13.1 Application – ~~Installation, construction, alteration, or repair of recycled water systems for water closets, urinals, trap primers for floor drains, floor sinks and other allowed uses.~~ Design standards to safely plumb buildings with both potable and recycled water systems.

Enforcing Agency – State or local agency specified by the applicable provisions of law.

Authority Cited – Water Code Section 13557.

References – Water Code Section 13553.

1.13.2 Adopting Agency Identification. The provisions of this code applicable to buildings identified in this section will be identified in the Matrix Adoption Tables under the acronym DWR.

Authority: Water Code Section: 13557.

Reference(s): Water Code Sections: 13557.

2. DWR proposes to adopt the following sections of Chapter 2 of the CPC as follows:

**CHAPTER 2
DEFINITIONS**

206.0

Disinfected Tertiary Recycled Water. Filtered and subsequently disinfected wastewater that meets the approved method of treatment and minimum level of water quality specified in California Code of Regulations, Title 22, Division 4, Chapter 3 for the purpose of direct beneficial use.

220.0

~~Reclaimed Water.~~ Nonpotable water provided by a water/wastewater utility that, as a result of tertiary treatment of domestic wastewater, meets requirements of the public health Authority Having Jurisdiction for its intended uses.

Reclaimed (Recycled) Water. Nonpotable water that meets California State Water Resources Control Board statewide uniform criteria for disinfected tertiary recycled water. Reclaimed (recycled) water is also known as "recycled water" or "reclaimed water".

Recycled Water Supply System. The building supply pipe, the water distribution pipes, and the necessary connecting pipes, fittings, control valves, backflow prevention devices, and all appurtenances carrying or supplying reclaimed (recycled) water in or adjacent to the building or within the premises.

Authority: Water Code Section: 13557.

Reference(s): Water Code Sections: 13557.

3. DWR proposes to adopt the following sections of Chapter 6 of the CPC as follows:

**CHAPTER 6
WATER SUPPLY AND DISTRIBUTION**

601.2 Hot and Cold Water Required. Except where not deemed necessary for safety or sanitation by the Authority Having Jurisdiction, each plumbing fixture shall be provided with an adequate supply of potable running water piped thereto in an approved manner, so arranged as to flush and keep it in a clean and sanitary condition without danger of backflow or cross-connection. Water closets and urinals shall be flushed using an approved flush tank or flushometer valve.

Exceptions:

- (1) Listed fixtures that do not require water for their operation and are not connected to the water supply.
- (2) **(HCD 1 & HCD 2)** For limited-density owner-built rural dwellings, potable water shall be available to the dwelling site, although such water need not be pressurized. Where water is not piped from a well, spring, cistern or other source, there shall be a minimum reserve of 50 gallons (189 L) of potable water available. Where water delivery is pressurized, piping shall be installed in accordance with the provisions of this chapter.
- (3) **(DWR)** For all residential occupancies, alternate water sources may be allowed as specified in Chapter 15 of this code in addition to potable water.
- (4) **(DWR)** For non-residential occupancies, alternate water sources may be allowed as specified in Chapter 15 of this code.
- (5) **(DWR)** Where a public agency requires a building to use recycled water to flush water closets and urinals in accordance with California Water Code 13554.

In occupancies where plumbing fixtures are installed for private use, hot water shall be required for bathing, washing, laundry, cooking purposes, dishwashing or maintenance. In occupancies where plumbing fixtures are installed for public use, hot water shall be required for bathing and washing purposes. This requirement shall not supersede the requirements for individual temperature control limitations for public lavatories and public and private bidets, bathtubs, whirlpool bathtubs, and shower control valves.

601.3.3 Alternate Water Sources. Alternate water source systems shall have a purple (Pantone color No. 512, 522C, or equivalent) background with uppercase lettering and shall be field or factory-marked as follows:

- (1) Gray water systems shall be marked in accordance with this section with the words "CAUTION: NONPOTABLE GRAY WATER, DO NOT DRINK" in black letters.
- (2) Reclaimed (recycled) water systems *for outdoor applications* shall be marked in accordance with this section with the words: "CAUTION: NONPOTABLE RECLAIMED (RECYCLED) WATER, DO NOT DRINK" in black letters.
- (3) On-site treated water systems shall be marked in accordance with this section with the words: "CAUTION: ON-SITE TREATED NONPOTABLE WATER, DO NOT DRINK" in black letters.
- (4) Rainwater catchment systems shall be marked in accordance with this section with the words: "CAUTION: NONPOTABLE RAINWATER WATER, DO NOT DRINK" in black letters.

Exception: [DWR] For recycled water supply systems that are within or a part of a building, the provisions of Section ~~4503~~-71505.7 shall apply.

Authority: Water Code Section: 13557.
Reference(s): Water Code Sections: 13554.

4. DWR proposes to adopt sections 1501, 1502, and 1503 of Chapter 15 of the CPC as follows:

**CHAPTER 15
§§1501, 1502, and 1503
ALTERNATIVE WATER SOURCES FOR NONPOTABLE APPLICATIONS**

Intent

The provisions of this chapter are intended to:

- ~~1. Conserve potable water by facilitating greater reuse of laundry, shower, lavatory and similar sources of discharge, or by the use of alternate water sources, where available.~~
- ~~2. Reduce the number of non-compliant gray water systems by making legal compliance easily achievable.~~
- ~~3. Provide guidance for avoiding potentially unhealthful conditions.~~
- ~~4. Provide an alternative way to relieve stress on a private sewage disposal system by diverting the graywater.~~

1501.0 General

1501.1 Applicability. The provisions of this chapter shall apply to the construction, alteration, *discharge, use* and repair of alternate water source systems for nonpotable applications.

1501.1.1 Allowable Use of Alternate Water. Where approved or required by the Authority Having Jurisdiction, alternate water sources [reclaimed (recycled) water, gray water, and on-site treated nonpotable *gray* water] shall be permitted to be used instead of potable water for the applications identified in this chapter.

1501.2 System Design. Alternate water source systems shall be designed in accordance with this chapter by a registered design professional or licensed person who demonstrates competency to design the alternate water source system as required by the Authority Having Jurisdiction. Components, piping, and fittings used in any alternate water source system shall be listed.

1501.3 Permit. It shall be unlawful for a person to construct, install, alter, or cause to be constructed, installed, or altered an alternate water source system in a building or on *a its* premises without first obtaining a permit to do such work ~~from the Authority Having Jurisdiction~~ from the Authority Having Jurisdiction. *No changes or connections shall be made to either the alternate water source system or the potable water system within a site containing an alternate water source system without approval by the Authority Having Jurisdiction.*

1501.4 Component identification. System components shall be properly identified as to the manufacturer.

1501.5 Maintenance and Inspection. Alternate water source systems and components shall be inspected and maintained in accordance with ~~Section 1501.5.1 through Section 1501.5.3~~ *the manufacturer's recommendations and/or as required by the Authority Having Jurisdiction.*

Exception: (DWR) *Recycled water supply systems that are within or a part of a building shall comply with Section ~~1503.15~~ 1505.15.*

1501.5.1 Frequency. ~~Alternate water source systems and components shall be inspected and maintained in accordance with Table 1501.5 unless more frequent inspection and maintenance are required by the manufacturer.~~

1501.5.2 Maintenance Log. ~~A maintenance log for gray water and on-site treated nonpotable water systems is required to have a permit in accordance with Section 1501.3 and shall be maintained by the property owner and be available for inspection. The property owner or designated appointee shall ensure that a record of testing, inspection, and maintenance in accordance with Table 1501.5 is maintained in the log. The log will indicate the frequency of inspection and maintenance for each system.~~

1501.5.3 1501.5.1 Maintenance Responsibility. The required maintenance and inspection of alternate source systems shall be the responsibility of the property owner, unless otherwise required by the Authority Having Jurisdiction.

1501.6 Operation and Maintenance Manual. An operation and maintenance manual for gray water, and on-site treated *nonpotable gray water, and recycled water supply* systems required to have a permit in accordance with Section 1501.3, ~~Section 1503.2~~ 1505.2 and ~~Section 1504.2~~ 1506.2 shall be supplied to the building owner by the system designer or installer. The operating and maintenance manual shall include the following:

- (1) ~~Detailed diagram~~ *Diagram(s)* of the entire system and the location of system components.
- (2) Instructions on operating and maintaining the system.
- (3) ~~Details~~ *Instructions* on maintaining the required water quality ~~as determined by the Authority Having Jurisdiction for on-site treated nonpotable water systems.~~
- (4) Details on *startup, shutdown, and* deactivating the system for maintenance, repair, or other purposes.
- (5) Applicable testing, inspection, and maintenance frequencies in accordance with ~~Table Section 1501.5 or Section 1503.15~~ 1505.15 as applicable.
- (6) A method of contacting the *installer and/or* manufacturer(s).
- (7) *Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.*

1501.7 Minimum Water Quality Requirements. The minimum water quality for alternate water source systems shall meet the applicable water quality requirements for the intended application as determined by the Authority Having Jurisdiction. ~~In the absence of water quality requirements, the EPA/625/R-04/108 contains recommended water reuse guidelines to assist regulatory agencies to develop, revise, or expand alternate water source water quality standards. Water quality requirements for on-site treated nonpotable graywater shall comply with Section 1504.10.2 1506.9.2. Recycled water shall comply with the water quality requirements of Section 1503.14 1505.14.~~

Exception: Water treatment is not required for gray water used *in a disposal field* or for subsurface or subsoil irrigation.

1501.8 Material Compatibility. Alternate water source systems shall be constructed of materials that are compatible with the type of pipe and fitting materials, water treatment, and water conditions in the system.

1501.9 (formerly 1501.10) Signage

Signage for on-site treated nonpotable gray water shall comply with Section 1501.9.1 and Section 1501.9.2. Signage for reclaimed (recycled) water shall comply with Section 1503.12 1505.12.

1501.9.1 (formerly 1501.10.1) Commercial, Industrial, Institutional, and Residential Restroom Signs. A sign shall be installed in restrooms in commercial, industrial, and institutional occupancies, *and in residential common use areas* using ~~reclaimed (recycled) water and~~ on-site treated *nonpotable gray water*, for water closets, urinals, or both. *Signs shall comply with all applicable requirements of the California Building Code. Each sign shall contain 42 of an inch (12.7 mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) are visible to users. The location of the sign(s) shall be approved by the Authority Having Jurisdiction and shall contain the following text:*

TO CONSERVE WATER, THIS BUILDING USES *_____* ON-SITE TREATED NONPOTABLE GRAYWATER TO FLUSH TOILETS AND URINALS.

1501.9.2 (formerly 1501.10.2) Equipment Room Signs. Each room containing ~~reclaimed (recycled) water and~~ on-site treated *nonpotable gray water* equipment shall have a sign posted in a location that is visible to anyone working on or near *nonpotable gray water* equipment with the following wording in 1 inch (25.4 mm) letters:

CAUTION: ~~NONPOTABLE~~ *_____* ON-SITE TREATED NONPOTABLE GRAY WATER, DO NOT DRINK. DO NOT CONNECT TO DRINKING WATER SYSTEM. NOTICE: CONTACT BUILDING MANAGEMENT BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM.

_____ Shall indicate ~~RECLAIMED (RECYCLED) WATER or ON-SITE TREATED WATER~~ accordingly.

1501.10 (formerly 1501.9) System Controls. Controls for pumps, valves, and other devices that contain mercury that come in contact with alternate water source water supply shall not be permitted.

1502.4 1501.11 Separation Requirements. Underground alternate water source service piping other than gray water shall be separated from the building sewer in accordance with this code. Treated nonpotable water pipes shall be permitted to be run or laid in the same trench as potable water pipes with a 12 inch (305 mm) minimum vertical and horizontal separation where both pipe materials are approved for use within a building. Where horizontal piping materials do not comply with this requirement, the minimum separation shall be increased to 60 inches (1524 mm). The potable water piping shall be installed at an elevation above the treated nonpotable water piping.

Exception: *[DWR] Recycled water supply systems that are within or a part of a building shall comply with Section 1505.11.*

1502.5 1501.43 12 Abandonment. Alternate water source systems that are no longer in use or fail to be maintained in accordance with Section 1501.5 shall be abandoned. Abandonment shall comply with Section 1501.43 12.1 and Section 1501.43 12.2.

1502.5.1 1501.43 12.1 General. An abandoned system or part thereof covered under the scope of this chapter shall be disconnected from remaining systems, drained, plugged, and capped in an approved manner.

1502.5.2 1501.43 12.2 Underground Tank. An underground water storage tank that has been abandoned or otherwise discontinued from use in a system covered under the scope of this chapter shall be completely drained and filled with earth, sand, gravel, concrete, or other approved material or removed in a manner satisfactory to the Authority Having Jurisdiction.

1502.6 1501.44 13 Sizing. Unless otherwise provided for in this chapter, alternate water source piping shall be sized in accordance with Chapter 6 for sizing potable water piping.

1501.14 (formerly 1501.15) Hose Bibbs for Single-Family Dwellings. (HCD 1) *Hose bibbs shall not be allowed on reclaimed (recycled) water piping systems for single-family dwelling units. (DWR) For hose bibbs that are within or a part of a building and receive reclaimed (recycled) water shall comply with Section 1505.9.*

1502.0. Inspection and Testing.

1502.1 General (Formerly 1501.11 Inspection and Testing). Alternate water source systems shall be inspected and tested in accordance with Section 1502.2 through Section 1502.3.4 and/or as required by the Authority Having Jurisdiction.

Exception: *(DWR) Recycled water supply systems that are within or a part of a building shall comply with Section 1503.43 1505.13.*

1503.0 Gray Water Systems.

1503.3 (formerly 1502.3) Connections to Potable and Reclaimed (Recycled) Water Systems. Gray water systems shall have no direct connection to a potable water supply, on-site treated nonpotable water supply, or reclaimed (recycled) water supply systems.

Exceptions:

- (1) Potable water, on-site treated nonpotable water, or reclaimed (recycled) water, or rainwater is permitted to be used as makeup water for a non-pressurized storage tank provided the connection is protected by an air gap in accordance with this code.
- (2) A potable water supply may be connected temporarily for initial testing of the untreated graywater system as required in Section 1504.44.2-2 1502.3.2.

Authority: Water Code Section: 13557.

Reference(s): Water Code Sections: 13557.

5. DWR proposes to adopt sections 1505 and 1506 of Chapter 15 of the CPC as follows:

CHAPTER 15
§§1505 and 1506
ALTERNATIVE WATER SOURCES FOR NONPOTABLE APPLICATIONS

1505.0 ~~1503.0~~ Reclaimed (Recycled) Water Supply Systems in Buildings.

1505.1 (formerly 1503.1) General. The provisions of ~~this section~~ ~~Section 1503.0~~ ~~1505.0~~ through ~~Section 1503.15~~ ~~1505.15~~ shall apply to safely plumb buildings with both potable and recycled water supply systems. Unless otherwise specified in this code, the general provisions applying to alternate water systems pursuant to Section 1501.0 through Section 1501.14 shall apply to recycled water supply systems. The provisions in this section encompass the installation, construction, alteration, and repair of ~~reclaimed (recycled)~~ water supply systems that are within or a part of a building and receive reclaimed (recycled) water provided by a water/wastewater utility. When dealing with recycled water supply systems, the Authority Having Jurisdiction and Enforcing Agency may include the recycled water purveyor or potable water purveyor in accordance with their respective statutory authority and responsibility as provided on their respective permits for supplying water.

1505.1.1 (formerly 1503.1.1) Allowed Uses. Allowed ~~intended to supply~~ uses shall include such as water closets, urinals, trap primers for floor drains and floor sinks, ~~aboveground and subsurface irrigation,~~ industrial or commercial cooling or air conditioning and other uses as generally allowed in the California Code of Regulations, Title 22, Division 4, Chapter 3 and specifically allowed in ~~approved by the Authority Having Jurisdiction.~~ the permit for the facility producing or supplying the reclaimed (recycled) water issued by the State Water Resources Control Board or Regional Water Quality Control Board.

1505.1.2 (formerly 1503.1.2) Structures Allowed for Toilet and Urinal Flushing. In accordance with Water Code Section 13553, reclaimed (recycled) water shall be allowed for toilet and urinal flushing in certain structures. These structures include commercial, retail and office buildings, theaters, auditoriums, condominium projects, schools, hotels, apartments, barracks, dormitories, jails, prisons, reformatories, and other structures as determined by the State Water Resources Control Board.

1505.2 (formerly 1503.2) Permit. It shall be unlawful for a person to construct, install, alter, or cause to be constructed, installed, or altered a reclaimed (recycled) water system within a building or on its premises without first obtaining a permit to do such work from the Authority Having Jurisdiction.

Prior to commencing the issuance of permits for recycled water supply systems pursuant to state requirements relating to recycled water, a city, county, city and county or other local agency shall seek consultation with the State Water Resource Control Board, local public health department and local recycled water purveyor to ensure that state and local public health concerns are addressed in local standards or ordinances, or in issuing permits.

1505.2.1 (formerly 1503.2.1) Plumbing Plan Submission. No permit for a ~~reclaimed (recycled)~~ water supply system shall be issued until complete plumbing plans, with data satisfactory to the Authority Having Jurisdiction, have been submitted and approved.

1505.3 (formerly 1503.3) System Changes. No changes or connections shall be made to either the ~~reclaimed (recycled)~~ water supply system or the potable water system within a site containing a ~~reclaimed (recycled)~~ water supply system without approval by the Authority Having Jurisdiction.

1505.4 (formerly 1503.4) Connections to Potable or Reclaimed (Recycled) Water Systems. Reclaimed (recycled) water supply systems shall have no *direct* connection to a potable water supply or alternate water source system.

Exceptions:

- (1) Potable water is permitted to be used as makeup water for a reclaimed (recycled) water storage tank provided the *potable* water supply inlet is protected by an air gap ~~or reduced pressure principle backflow preventer~~ in accordance with this code.

- (2) A potable water supply may be connected temporarily for initial testing of the recycled water supply system as provided in Section ~~1505.13.2.2~~ ~~4503.13.2.2~~. Prior to temporarily connecting the potable line to the recycled water supply system for initial testing purposes, the potable line must have a reduced-pressure principle backflow preventer installed.
- (3) Reclaimed (recycled) water is permitted to be used as makeup water for an alternate water source system provided the recycled water supply system is protected by an air gap in accordance with this code.

1505.5 (formerly 1503.5) Initial Cross-Connection Test. A cross-connection test is required in accordance with Section ~~4502.3~~ ~~4503.13.2.2~~ 1505.13.2.2. Before the building is occupied or the system is activated, the installer shall perform ~~the~~ an initial cross-connection test in the presence of the Authority Having Jurisdiction ~~and~~ or other authorities having jurisdiction. The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.

1505.6 (formerly 1503.6) Reclaimed (Recycled) Water Supply System Materials. Reclaimed (recycled) water supply ~~and distribution~~ system materials shall comply with the requirements of this code for potable water supply and distribution systems, unless otherwise provided for in this section.

1505.7 (formerly 1503.7) Reclaimed (Recycled) Water Supply System Color and Marking Information. All mechanical equipment, including control valves, appurtenant to recycled water supply systems shall be painted purple or composed of purple material matching Pantone color No. 512, 522C or equivalent. Reclaimed (recycled) water systems shall ~~have a colored background and marking information in accordance with Section 601.3 of this code~~ be identified and permanently marked with clearly visible black uppercase lettering on purple background. The identification may be accomplished by labeling metallic and non-metallic piping using purple-colored (Pantone color No. 512) adhesive Mylar PVC tape affixed along the entire length of the pipe, or using non-metallic pipe manufactured with purple (Pantone color No. 512, 522C, or equivalent) integral to the material. For either material, the tape or pipe shall be installed so the wording is clearly visible and shall be field or factory marked as follows:

"CAUTION: NONPOTABLE RECYCLED WATER, DO NOT DRINK".

1505.8 (formerly 1503.8) Valves. Valves, except fixture supply control valves, shall be equipped with a locking feature.

1505.8.1 (formerly 1503.8.1) Valve Seals. The master reclaimed (recycled) water shut-off valve and/or the reclaimed (recycled) water meter curb cock and each valve within a wall shall be sealed after the recycled water supply system has been approved and placed into operation. These seals shall be either crimped lead wire seal or plastic break away seal which, if broken after system approval, shall be deemed conclusive evidence that the recycled water supply system has been accessed. The seals shall be purple, numbered, and contain the words "RECYCLED WATER", and shall be supplied by the recycled water purveyor, or by other arrangements acceptable to the Authority Having Jurisdiction.

1505.8.2 (formerly 1503.8.2) Valve and Appurtenance Access Door Signs. Each reclaimed (recycled) water valve within a wall shall have its access door into the wall equipped with a warning sign approximately 6 inches by 6 inches (152 mm x 152 mm) with wording in approximately 3/8 inch (9.5 mm) letters on a purple background. The wording text and format of the sign shall be substantially the same as that specified in Section ~~1505.12.3~~ ~~4503.12.3~~. The signs shall be attached inside the access door frame and shall hang in the center of the access door frame. This sign requirement shall be applicable to any and all access doors, hatches, etc., leading to reclaimed (recycled) water piping and appurtenances.

1505.9 (formerly 1503.9) Hose Bibbs. Hose bibbs shall not be allowed on reclaimed (recycled) water piping systems located in areas accessible to the public. ~~Access to reclaimed (recycled) water at points in the system accessible to the public shall be through a quick disconnect device~~ Only quick couplers that differs from those installed on the potable water system shall be used on the recycled water piping system in areas subject to public access. ~~Hose bibbs~~ Quick couplers supplying reclaimed (recycled) water shall be marked with the words: "CAUTION: NONPOTABLE ~~RECLAIMED~~ RECYCLED WATER, DO NOT DRINK," and one of the symbols in Figure 1505.9.

Exceptions:

In accordance with Health and Safety Code ~~Sections~~ Section 8117 and Section 8118, hose bibbs are approved for use in cemeteries supplied with reclaimed (recycled) water. A hose bibb in an area subject to

access by the general public shall be equipped with a sign marked "CAUTION: NONPOTABLE RECYCLED WATER, DO NOT DRINK," and one of the symbols in Figure 1505.9 4503.9.



FIGURE 1505.9

1505.10 (formerly 1503.10) Required Appurtenances. The reclaimed (recycled) water supply system and the potable water system within the building and the premises shall be provided with the required appurtenances (e.g., valves, air/vacuum relief valves, etc.) to allow for deactivation or drainage testing as required for a cross-connection test in accordance with Section 4502.3 4503.13.2 1505.13.2.

1505.11 (formerly 1503.11) Same Trench as Potable Water Pipes Pipe Separation in Trenches. Reclaimed (recycled) water pipes shall be permitted to be run or laid in the same trench as potable water pipes with 12 inches (305 mm) minimum vertical and horizontal separation where both pipe materials are approved for use within a building. Where piping materials do not meet this requirement, the minimum horizontal separation shall be increased to 6048 inches (4524 1220 mm). The potable water piping shall be installed at an elevation above the reclaimed (recycled) water piping. Reclaimed (recycled) water pipes laid in the same trench or crossing building sewer or drainage piping shall be installed in accordance with Section 609.0 and Section 720.0 of this code for potable water piping water pipes.

1505.12 (formerly 1503.12) Signs Signage. Signs in rooms and water closet tanks in buildings using reclaimed (recycled) water shall be in accordance with Section 4501.9 and Section 4501.9.4 4503.12.4 1505.12.1, 4503.12.2 1505.12.2, and 4503.12.3 1505.12.3. Signs on access doors to valves and appurtenances shall be in accordance with Section 4503.8.2 1505.8.2.

1505.12.1 (formerly 1503.12.1) Commercial, Industrial, Institutional, and Residential Restroom Signs. A sign shall be installed in each restroom of commercial, industrial, and institutional occupancies, and in residential common use areas using reclaimed (recycled) water for water closets, urinals, or both. Each sign shall contain letters of a highly visible color on a contrasting background with a character height as specified in the California Building Code (California Code of Regulations, Title 24, Part 2), Section 1143A.5 and Section 11B-703.5. The location of the sign(s) shall be such that the sign(s) are visible to users and shall be approved by the Authority Having Jurisdiction. The sign(s) shall contain the following text:

TO CONSERVE WATER, THIS BUILDING USES RECYCLED WATER TO FLUSH TOILETS AND URINALS.

1505.12.2 (formerly 1503.12.2) Tank-Type Toilet Signs. Where tank-type toilets (water closets) are flushed with recycled water, a permanent sign (such as plastic or stainless steel) shall be installed inside the tank to warn that the water within the tank is not a suitable emergency drinking water supply. The sign shall be labeled: "CAUTION: NONPOTABLE RECYCLED WATER – DO NOT DRINK."

1505.12.3 (formerly 1503.12.3) Equipment Room Signs. Each room containing reclaimed (recycled) water equipment shall have a sign posted in a location that is visible to anyone working on or near reclaimed (recycled) water equipment with the following wording in 1 inch (25.4 mm) letters on a purple background:

CAUTION: NONPOTABLE RECYCLED WATER, DO NOT DRINK. DO NOT CONNECT TO DRINKING WATER SYSTEM. NOTICE: CONTACT BUILDING MANAGEMENT BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM.

1505.13 (formerly 1503.13) Inspection and Testing. Reclaimed (recycled) water supply systems shall be inspected and tested in accordance with Section ~~4502.4~~ ~~4503.13.1~~ 1505.13.1 and Section ~~4503.13.2~~ 1505.13.2. The reclaimed (recycled) water purveyor or other designated appointee may substitute for the Authority Having Jurisdiction for the purpose of inspections and tests pursuant to this section.

1505.13.1 (formerly 1503.13.1) Supply System Inspection and Test. Recycled water supply systems shall be inspected and tested in accordance with this code for testing of potable water piping.

1505.13.2 (formerly 1503.13.2) Cross-Connection Inspection and Testing. An initial visual inspection and cross-connection test shall be performed on both the potable and recycled water supply systems before the initial operation of the ~~reclaimed (recycled) water source~~ supply system. During an initial or subsequent cross-connection test, the potable water system and ~~reclaimed (recycled) water source~~ supply system shall be isolated from each other and independently inspected and tested to ensure there is no cross-connection in accordance with Section ~~4503.13.2.2~~ 1505.13.2.2. Initial or subsequent inspections or tests shall be performed in accordance with Section ~~4503.13.2.4~~ 1505.13.2.1 through Section ~~4503.13.2.4~~ 1505.13.2.4.

- (1) Written reports of cross-connection inspections and testing shall be performed as provided in California Code of Regulations, Title 22, Section 60316.
- (2) A cross-connection test pursuant to Section ~~4503.13.2.2~~ 1505.13.2.2 shall be performed on the premises of a recycled water supply system when there is material reason to believe that the potable water system or recycled water supply system separation from another water supply has been compromised. A material reason to believe that the system has been compromised may be based on, but is not limited to, evidence gathered (a) during a visual inspection performed pursuant to Section ~~4503.13.2.1~~ 1505.13.2.1, (b) as a result of an inspection performed following complaints of water quality or flow conditions consistent with a compromised system, or (c) during a visual inspection that indicates that the ~~reclaimed (recycled) water supply system~~ has been modified.

1505.13.2.1 (formerly 1503.13.2.1) Visual System Inspection. A visual dual system inspection shall be conducted by the Authority Having Jurisdiction and other authorities having jurisdiction to verify that no modifications were made, and that no cross-connections are visible as follows:

- (1) Meter locations of the reclaimed (recycled) water source and potable water lines shall be checked.
- (2) All pumps and equipment, equipment room signs, and exposed piping in equipment room shall be checked.
- (3) All valves shall be checked to ensure that the valve lock seals are still in place and intact. Valve control door signs shall be checked to verify that no signs have been removed.

1505.13.2.2 (formerly 1503.13.2.2) Cross-Connection Test. A cross-connection test shall be performed pursuant to Section ~~4503.13.2~~ 1505.13.2. The test shall be conducted in the presence of the Authority Having Jurisdiction or other authorities having jurisdiction to determine whether a cross connection has occurred as follows:

- (1) The potable water system shall be activated and pressurized. The recycled water supply system shall be shut down, depressurized, and drained.
- (2) The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the recycled water supply system is empty. The minimum period the recycled water supply system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and the recycled water supply systems, but in no case shall that period be less than 1 hour.
- (3) All fixtures, potable and reclaimed (recycled) water source, shall be tested and inspected for flow. Flow from a ~~reclaimed (recycled) water supply source~~ system outlet indicates a cross-connection. No flow from a potable water outlet shall indicate that it is connected to the recycled water supply system.
- (4) The drain on the recycled water supply system shall be checked for flow during the test and at the end of the test.
- (5) The potable water system shall then be depressurized and drained.

- (6) *The recycled water supply system shall then be activated and pressurized. For the initial test, a temporary connection to a potable water supply shall be required to test the recycled water supply system plumbing. At the conclusion of the test, the temporary connection to the potable water supply shall be disconnected.*
- (7) *The recycled water supply system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the potable water system is empty. The minimum period the potable water system is to remain depressurized shall be determined on a case-by-case basis, but in no case shall that period be less than 1 hour.*
- (8) *All fixtures, potable and reclaimed (recycled) water, shall be tested and inspected for flow. Flow from a potable water system outlet indicates a cross-connection. No flow from a recycled water supply system outlet will indicate that it is connected to the potable water system.*
- (9) *The drain on the potable water system shall be checked for flow during the test and at the end of the test.*
- (10) *Where there is no flow detected in the fixtures that would indicate a cross-connection, the potable water system shall be repressurized.*

Where shutting off the water is not practical for residential, institutional, or industrial buildings, the Authority Having Jurisdiction may authorize testing procedures other than those described above.

1505.13.2.3 (formerly 1503.13.2.3) Discovery of Cross-Connection. *In the event that a cross-connection is discovered, the following procedure shall be activated immediately:*

- (1) *Notify the Authority Having Jurisdiction of the cross-connection.*
- (2) *The reclaimed (recycled) water piping to the building and its premises shall be shut down at the meter, and the reclaimed (recycled) water riser shall be drained.*
- (3) *Potable water piping to the building and its premises shall be shut down at the meter.*
- (4) *The cross-connection shall be uncovered and disconnected.*
- (5) *The building and its premises shall be retested in accordance with Section ~~4503.13.2.4~~ 1505.13.2.1 and Section ~~4503.13.2.2~~ 1505.13.2.2.*
- (6) *The potable water system shall be chlorinated with 50 parts-per-million (ppm) chlorine for 24 hours.*
- (7) *The potable water system shall be flushed after 24 hours, and a standard bacteriological test shall be performed. Where test results are acceptable, the potable water system shall be permitted to be recharged.*

1505.13.2.4 (formerly 1503.13.2.4) Periodic Inspection. *Periodic visual inspections of recycled water supply systems shall be required by the recycled water supplier or designee following the procedures in Section ~~4503.13.2.4~~ 1505.13.2.1. Pursuant to California Code of Regulations, Title 22, Section 60316, annual visual inspections shall be required for recycled water supply systems that are within or a part of a buildings.*

1505.14 (formerly 1503.14) Minimum Water Quality Requirements for Reclaimed (Recycled) Water. *The minimum water quality for reclaimed (recycled) water shall meet the applicable water quality requirements of California Code of Regulations, Title 22, Division 4, Chapter 3 (commencing with Section 60301) for disinfected tertiary recycled water and the applicable reclaimed (recycled) water use. The reclaimed (recycled) water supplier shall supply water in accordance with permits issued by the State Water Resources Control Board or Regional Water Quality Control Board.*

1505.15 (formerly 1503.15) Maintenance and Inspection. *Recycled water supply systems and components shall be inspected and maintained in accordance with the manufacturer's recommendations and/or as required by the Authority Having Jurisdiction. The frequency of testing, inspection, and maintenance shall be in accordance with Table ~~4503.45~~ 1505.15. The required inspection and maintenance shall be the responsibility of the property owner, unless otherwise required by the Authority Having Jurisdiction.*

**TABLE ~~1503.15~~ 1505.15
MINIMUM RECLAIMED (RECYCLED) WATER SOURCE TESTING, INSPECTION, AND MAINTENANCE
FREQUENCY**

DESCRIPTION	MINIMUM FREQUENCY*
<i>Inspect and clean filters and screens, and replace (where necessary).</i>	<i>Every 3 months.</i>
<i>Inspect pumps and verify operation.</i>	<i>After initial installation and every 12 months thereafter.</i>
<i>Inspect valves and verify operation.</i>	<i>After initial installation and every 12 months thereafter.</i>
<i>Inspect pressure tanks and verify operation.</i>	<i>After initial installation and every 12 months thereafter.</i>
<i>Clear debris from and inspect storage tanks, locking devices, and verify operation.</i>	<i>After initial installation and every 12 months thereafter.</i>
<i>Inspect caution labels and marking.</i>	<i>After initial installation and every 12 months thereafter.</i>

* **Note:** Frequency is as described in this table, or more frequently as required by manufacturer's instructions and/or the Authority Having Jurisdiction.

1506.0 (formerly 1504.0) On-Site Treated Nonpotable Gray Water Systems.

1506.4 (formerly 1504.4) Connections to Potable or Reclaimed (Recycled) Water Systems. On-site treated nonpotable gray water systems shall have no *direct* connection to a potable water supply or reclaimed (recycled) water source supply system.

Exceptions:

- (1) Potable or reclaimed (recycled) water is permitted to be used as makeup water for a non-pressurized storage tank provided the makeup water supply *inlet* is protected by an air gap in accordance with this code.
- (2) A potable water supply may be connected temporarily for initial testing of the on-site treated nonpotable gray water system as provided in Section ~~1504.11.2.2~~ 1502.3.2.

Authority: Water Code Section: 13557.

Reference(s): Water Code Sections: 13551, 13552.2, 13552.4, 13552.6, 13552.8, 13553, 13554, 13555.3. Health and Safety Code Sections: 8117, 8118.